

REMARKS/ARGUMENTS

This is a preliminary amendment in a RCE application. The Office Action mailed November 1, 2006 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. The original application contained claims 1-26. Claims 25-26 stand withdrawn from consideration in this application in response to a restriction requirement. The claims presented for examination are claims 1-24.

35 USC 102 Rejection

In the Office Action mailed November 1, 2006, claim 1 was rejected under 35 USC §102(b) as allegedly being anticipated by the Kardish reference (USPN 5,648,047).

Applicants have amended claim 1 and believe the invention claimed in amended claim 1 is not anticipated by the Kardish reference. The standard for a 35 USC §102 rejection is stated in RCA Corp. v. Applied Digital Systems, Inc., 221PQ 385, 388 (d. Cir. 1984) "Anticipation is established only when a single prior art reference discloses, either expressly or under principles of inherency, each and every element of a claimed invention."

Applicants' points out that the following element of Applicants' original claim 1 is not found in the Kardish reference:

"an environmental unit for receiving said sample collection unit and processing said sample collection unit for testing the test location for the explosives, said environmental unit being a heater or dryer for heating said sample collection unit."

Since the element described above is not found in the Kardish reference, the Kardish reference does not support a 35 USC §102(b) rejection of Applicants' original claim 1 and the rejection should be withdrawn.

35 USC 103 Rejection

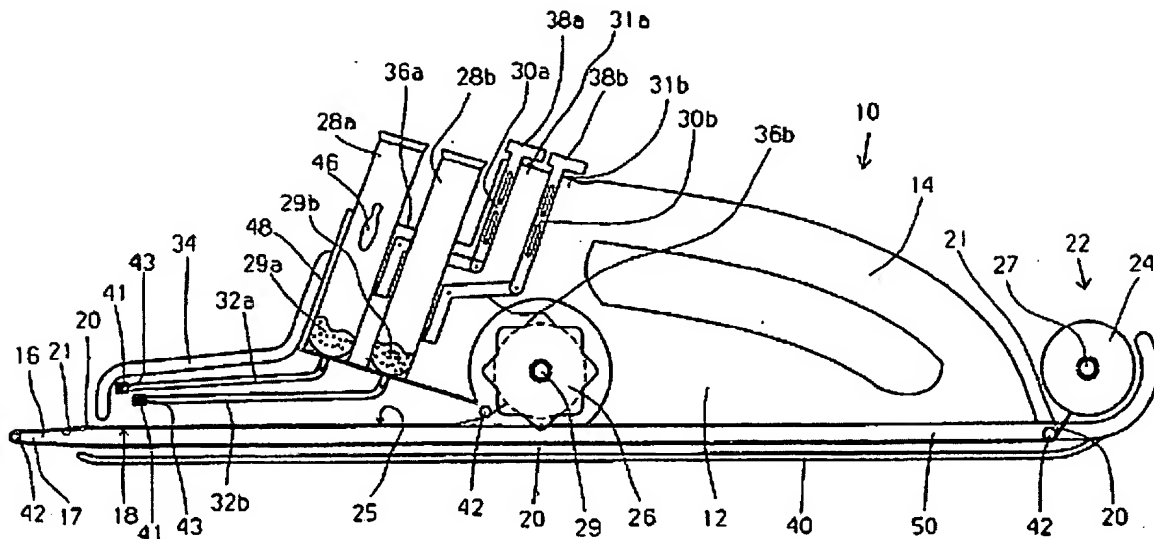
In the Office Action mailed November 1, 2006, claims 2-24 were rejected under 35 USC 103(a) as allegedly being unpatentable over the primary Kardish (USPN 5,648,047) in view of the secondary Dietze et al (USPN 5,035,862).

Applicants believe that claims 2-24 are patentable and that the Kardish and Dietze et al references would not support a 35 USC §103(a) rejection. In addition, secondary considerations overcome the rejection of claims 2-24 under 35 USC §103(a).

The Primary Kardish Reference

The abstract of the primary Kardish reference describes the device as, "a hand-held device for rapid colorimetric detection of explosives, narcotics, and other chemicals which can be accurately operated by non-skilled personnel and perform numerous tests in a quick sequential manner without exposing a user to hazardous reagents and without exposing sensitive reagents to deteriorating environmental conditions, the device comprising (a) a housing for handling and using the device, the housing including a sampling area and a testing area; (b) a roll of substrate for sampling materials suspected as including the chemical; (c) a feeding reel being rotatably connected to the housing, the feeding reel being for accommodating the roll of substrate; (d) at least one container for accommodating at least one detecting reagent, the at least one detecting reagent is for the colorimetric detection of the chemical; and (e) at least one dispensing mechanism for dispensing a predetermined volume of the at least one reagent

onto the substrate at the testing area." The device is illustrated in FIG. 1 reproduced below.



The primary Kardish reference describes the device as follows:

"Housing 12 further includes a sampling area 16 and a testing area 18, ... Preferably, sampling area 16 is formed as a tip 17 a roll 22 of substrate 20 ... Roll 22 of substrate 20 is engaged by a feeding reel 24 which is rotatably connected to housing 12."

"Used segments 25 of substrate 20 are preferably engaged by a take-up reel 26 which is rotatably connected to housing 12, preferably within housing 12. Take-up reel 26 is for advancing substrate 20 and thus the sampled material from sampling area 16 into testing area 18."

"Device 10, further includes at least one, preferably two, more preferably four container 28 (two are shown in FIG. 1, referred to as 28a and 28b) for accommodating at least one detecting reagent 29a and 29b,"

"Device 10 further includes at least one dispensing mechanism 30a and 30b for dispensing a predetermined volume of reagents 29a and 29b, respectively, onto substrate 20 at testing area 18."

"In a preferred embodiment, each of containers 28 is continued by a tube 32a and 32b, respectively, for directing reagents 29 to testing area 18. Each of tubes 32 preferably has a diameter permitting the formation of a capillary effect for effecting the dispensing of the predetermined volume of reagents 29 onto substrate 20 at testing area 18. By having a capillary effect, tubes 32 ensure that constant volume of liquids (i.e., one drop from each reagent) is delivered onto testing area 18. The quantity (i.e., volume) of liquid in a given drop is a complex function of the diameter of tubes 32, its material of made and the type of liquid."

Yet, one can experimentally select tubes 32 permitting application of a particular quantity of reagents 29 onto substrate 20 at testing area 18."

Elements of Claims 2-24 Not Shown by The Kardish Reference

Claims 2-12 depend from claim 1 and include all the elements of claim 1. Claims 14-24 depend from claim 13 and include all the elements of claim 13. The following elements of Applicants' claims 2-24 are not shown by the Kardish reference:

"an environmental unit for receiving said sample collection unit and processing said sample collection unit for testing the test location for the explosives, said environmental unit being a heater or dryer for heating said sample collection unit." (From Parent Claim 1)

"wherein said environmental unit is a heater." (Claim 2)

"wherein said environmental unit is a dryer." (Claim 3)

"wherein said environmental unit is a heater and dryer." (Claim 4)

"wherein said environmental unit is a chemical heater." (Claim 5)

"wherein said environmental unit is an electric heater." (Claim 6)

"including a heating pad." (Claim 7)

"including a receiving unit for receiving said sample collection unit." (Claim 8)

"including a heating pad and a receiving unit for receiving said sample collection unit." (Claim 9)

"including a battery for providing power to said heater." (Claim 10)

"including a switch for controlling said heater." (Claim 11)

"including a battery for providing power to said heater and a switch for controlling said heater." (Claim 12)

"a flat disk sample collection pad for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to

said second explosives detecting reagent, said flat disk sample collection pad operatively connected to said tester body" and "an environmental means for receiving said flat disk sample collection pad, said environmental means being a heater or a dryer operatively connected to said tester body for heating or drying said flat disk sample collection pad and testing the test location for the explosives." (Claim 13)

"wherein said environmental means is a heater." (Claim 14)

"wherein said environmental means is a dryer." (Claim 15)

"wherein said environmental means is a heater and dryer." (Claim 16)

"wherein said environmental means is a chemical heater." (Claim 17)

"wherein said environmental means is an electric heater." Claim 18)

"including a heating pad." (Claim 19)

"including a receiving unit for receiving said flat disk sample collection pad." (Claim 20)

"including a heating pad and a receiving unit for receiving said flat disk sample collection pad." (Claim 21)

"including a battery for providing power to said heater." (Claim 22)

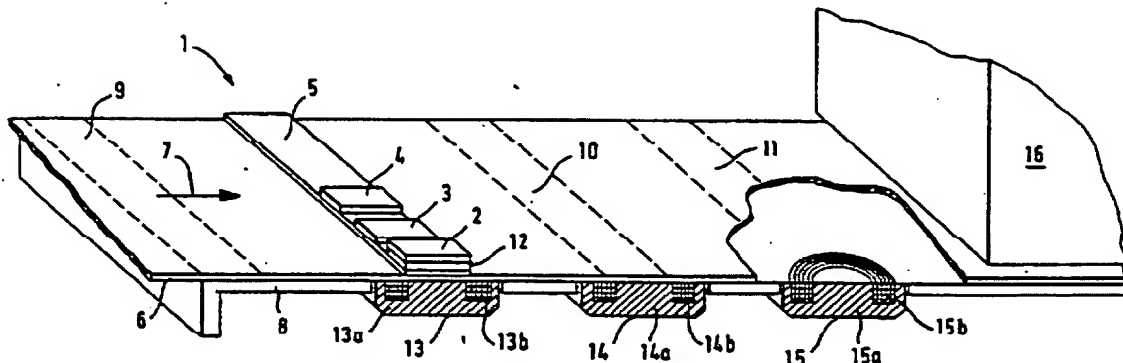
"including a switch for controlling said heater." (Claim 23)

"including a battery for providing power to said heater and a switch for controlling said heater." (Claim 24)

The Secondary Dietze et al Reference

The secondary Dietze et al reference shows "An analytical system for the determination of a component of a fluid, especially blood or urine." The secondary Dietze et al reference does not mention testing for explosives.

The secondary Dietze et al reference is illustrated by FIG. 1 reproduced below.



The secondary Dietze et al reference describes the heater(s) as follows:
 "Several induction heaters 13, 14 and 15 are embedded in the transport table 8. In each case, they comprise a ferrite core 13a, 14a, 15a and a coil 13b, 14b, 15b. In the area of the induction heater 15, the paper sheet is shown cut open, so that the circular construction of the core and the coil can be seen."

"To heat it to an elevated temperature, the test field must be brought to the working area of an induction heater. In FIG. 1, a magnetic field emanates from the induction heater 13, when an alternating current flows through coil 13b of heater 13. The corresponding test field of a test strip, lying on positions 10 and 11, is in the working area of the alternating magnetic field emanating from the induction heaters 14, 15. Generally the metallic conducting layer 12 has to be in the working area of the magnetic field in the sense that it has to be positioned in the range of that field such that an effective heating is achieved due to the electric current inductively generated by the field. Preferably the distance between the coil 13b and the metal foil 12 should be as short as possible. In practice, a distance of 3 to 5 mm has proven especially satisfactory."

Applicants' Claimed Invention

Applicants' claimed invention is illustrated in FIGS. 3 and 4 reproduced below.

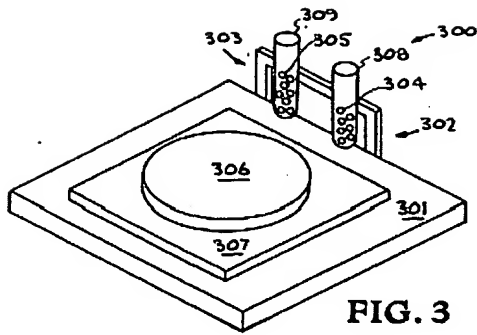


FIG. 3

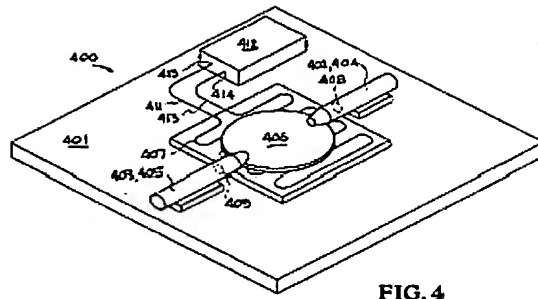


FIG. 4

Applicants' claimed invention is claimed in independent claims 1 and claim 13 as follows:

1. A tester for testing for explosives associated with a test location, comprising:
 a first explosives detecting reagent;
 a first reagent holder and dispenser, said first reagent holder and dispenser containing said first explosives detecting reagent;
 a second explosives detecting reagent;
 a second reagent holder and dispenser containing said second explosives detecting reagent;
 a sample collection unit for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to said second explosives detecting reagent; and
 an environmental unit for receiving said sample collection unit and processing said sample collection unit for testing the test location for the explosives, said environmental unit being a heater or dryer for heating said sample collection unit.

13. A tester for testing for explosives associated with a test location, comprising:
 a tester body;
 a first reagent for detecting explosives;
 a first reagent container for receiving said first reagent means;
 a second reagent for detecting explosives;
 a second reagent container for receiving said second reagent means;
 a flat disk sample collection pad for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to said second explosives detecting reagent, said flat disk sample collection pad operatively connected to said tester body,

wherein said first reagent container is operatively connected to said body and positioned to deliver said first reagent to said flat disk sample collection pad,

wherein said second reagent container is operatively connected to said body and positioned to deliver said second reagent to said flat disk sample collection pad; and

an environmental means for receiving said flat disk sample collection pad, said environmental means being a heater or a dryer operatively connected to said tester body for heating or drying said flat disk sample collection pad and testing the test location for the explosives.

Missing Elements of Applicants' Claims 2-12

The following elements of Applicants' claims 2-12 are not shown by the references:

"an environmental unit for receiving said sample collection unit and processing said sample collection unit for testing the test location for the explosives, said environmental unit being a heater or dryer for heating said sample collection unit." (From Parent Claim 1)

"wherein said environmental unit is a heater." (Claim 2)

"wherein said environmental unit is a dryer." (Claim 3)

"wherein said environmental unit is a heater and dryer." (Claim 4)

"wherein said environmental unit is a chemical heater." (Claim 5)

"wherein said environmental unit is an electric heater." (Claim 6)

"including a heating pad." (Claim 7)

"including a receiving unit for receiving said sample collection unit." (Claim 8)

"including a heating pad and a receiving unit for receiving said sample collection unit." (Claim 9)

"including a battery for providing power to said heater." (Claim 10)

"including a switch for controlling said heater." (Claim 11)

“including a battery for providing power to said heater and a switch for controlling said heater.” (Claim 12)

Claim 13 Element “a flat disk sample collection pad”

Claim 13 includes the element, “a flat disk sample collection pad for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to said second explosives detecting reagent, said flat disk sample collection pad operatively connected to said tester body.”

The primary Kardish reference discloses “a roll 22 of substrate 20 ... Roll 22 of substrate 20 is engaged by a feeding reel 24 which is rotatably connected to housing 12.” “Used segments 25 of substrate 20 are preferably engaged by a take-up reel 26 which is rotatably connected to housing 12, preferably within housing 12. Take-up reel 26 is for advancing substrate 20 and thus the sampled material from sampling area 16 into testing area 18.”

Applicants’ claim 13 element “a flat disk sample collection pad for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to said second explosives detecting reagent, said flat disk sample collection pad operatively connected to said tester body” is very different from the Kardish “roll 22 of substrate 20 engaged by a feeding reel 24 rotatably connected to housing 12.” Applicants’ claim element would not work in the Kardish reference and would destroy the operability of the Kardish reference device.

The secondary Dietze et al reference does not show Applicants’ claim 13 element “a flat disk sample collection pad for exposure to said test location, exposure to said first explosives detecting reagent, and exposure to said second explosives detecting reagent, said flat disk sample collection pad operatively connected to said tester body.” Since both the primary Kardish reference and the

secondary Dietze et al reference both fail to show Applicants' claim element there could be no obvious combination of the two references that would produce Applicants' invention defined by claim 13 and dependent claims 14-24.

Claim 13 and Dependent Claims 14-24

Element "environmental means being a heater or a dryer"

Claim 13 and dependent claims 14-24 include the elements, "an environmental means for receiving said flat disk sample collection pad, said environmental means being a heater or a dryer operatively connected to said tester body for heating or drying said flat disk sample collection pad."

The primary Kardish reference completely lacks any reference to a heater or dryer.

The secondary Dietze et al reference shows, "An analytical system for the determination of a component of a fluid, especially blood or urine. ... Several induction heaters 13, 14 and 15 are embedded in the transport table 8. In each case, they comprise a ferrite core 13a, 14a, 15a and a coil 13b, 14b, 15b. ... To heat it to an elevated temperature, the test field must be brought to the working area of an induction heater. In FIG. 1, a magnetic field emanates from the induction heater 13, when an alternating current flows through coil 13b of heater 13. The corresponding test field of a test strip, lying on positions 10 and 11, is in the working area of the alternating magnetic field emanating from the induction heaters 14, 15."

There is no suggestion or motivation to combine the primary Kardish reference device for colorimetric detection of explosives and narcotics and the secondary Dietze et al reference analytical system for the determination of a component of a fluid, especially blood or urine device. The secondary Dietze et al reference does not mention testing for explosives. The Kardish reference device

combined with the Dietze et al reference device would destroy the operability of the Dietze et al reference device. Note that in the Dietze et al reference device a magnetic field emanates from the induction heater 13, when an alternating current flows through coil 13b of heater 13. The corresponding test field of a test strip, lying on positions 10 and 11, is in the working area of the alternating magnetic field emanating from the induction heaters.

There is no teaching in either of the two references to combine the primary Kardish reference and the secondary Dietze et al reference and produce the inspection tester for testing for explosives defined by claim 13 and dependent claims 14-24.

Patentability of Claims 14-24 that Depend from Claim 13

Beginning with claim 13 which is the parent claim of claims 14-24, many of the elements of claim 13 are not shown in the references. Also, there is no suggestion or motivation to combine the primary Kardish reference and the secondary Dietze et al reference. Further, there is no teaching in either of the two references to combine the primary Kardish reference and the secondary Dietze et al reference and produce the tester for testing for explosives defined by claim 13.

No Suggestion or Motivation to Modify or Combine References

Applicants submit there is no suggestion or motivation to modify the primary Kardish reference to include the many missing claim elements that have been identified. The Dietze et al reference shows a system that is substantially different from the system shown in the Kardish reference.

Since both the primary Kardish reference and the secondary Dietze et al reference both fail to show Applicants' claim elements there could be no obvious

combination of the two references that would produce Applicants' invention defined by claims 2-24.

There is no suggestion in the two references to modify the primary Kardish reference to include the many missing claim elements identified above.

Under MPEP §2142, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. It should be noted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Since there is no suggestion or motivation to modify the primary Kardish reference to include the many missing claim elements identified above, a rejection of Applicants' claims 2-24 under 35 USC §103(a) is not appropriate and should be withdrawn.

NonObviousness of Applicants' Claims 2-24 Inventions - Secondary Considerations

The inventions of Applicants' claims 2-24 have obtained commercial success, recognition by peers, praise by others, have been licensed, and fulfills a long-felt but unsolved need.

The May 4, 2006 issue of the *Valley Times* newspaper states, "The lab has licensed the technology to Field Forensics Inc. of St. Petersburg, Fla." A copy of The May 4, 2006 issue of the *Valley Times* is enclosed. The May 4, 2006 News Release "Screening tool to help detect explosives nets technology transfer award for LLNL researchers" by the Lawrence Livermore National Laboratory states,

"The technology has been licensed to Field Forensics Inc., a St. Petersburg, Fla., company, and went on the market last October." A copy of the May 4, 2006 News Release "Screening tool to help detect explosives nets technology transfer award for LLNL researchers" by the Lawrence Livermore National Laboratory is attached. Field Forensics Inc. (FFI), Applicants' licensee, sells models of Applicants' claimed invention worldwide. A copy of the February 15, 2007 Field Forensics Inc. (FFI) website is attached.

The article "Pocket-sized Test Detects Trace Explosives," in the October 2006 issue of Science & Technology Review (S&TR) contains the following statements:

"SECURITY forces throughout the world need detection tools that can quickly and accurately locate small amounts of explosives. Technology developed by Lawrence Livermore will provide emergency response, law-enforcement, and military personnel with an easy-to-use explosives detector small enough to carry in a shirt pocket. This technology, called E.L.I.T.E.TM (Easy Livermore Inspection Test for Explosives), is inexpensive and requires minimal training for deployment."

"The E.L.I.T.E. card technology was developed by a team of scientists and engineers from the Laboratory's Forensic Science Center (FSC) and Center for Energetic Materials. Led by FSC deputy director John Reynolds, the team won a 2006 R&D 100 Award for the new technology."

"The product, which also received a 2006 Excellence in Technology Transfer Award from the Federal Laboratory Consortium, is marketed by Field Forensics, Inc., of Florida."

"Since October 2005, when units became commercially available, Field Forensics has sold E.L.I.T.E. cards to many government agencies, including the Department of Homeland Security, New York State Police, Royal Canadian Mounted Police, and Queensland (Australia) Police."

A copy of the article "Pocket-sized Test Detects Trace Explosives," in the October 2006 issue of Science & Technology Review (S&TR) is enclosed.

The article "FLC AWARDS – 2006 AWARDS FOR EXCELLENCE IN TECHNOLOGY TRANSFER DEPARTMENT OF ENERGY - Lawrence Livermore National Laboratory - ELITE: Easy Livermore Inspection Tester for Explosives" in the Department of Energy (DOE) website contains the following statements:

"International terrorist activity has increased markedly in recent years, spurring demand by security agencies worldwide for efficient, accurate explosives detection capabilities."

"To meet this need, Lawrence Livermore National Laboratory (LLNL) perfected a disposable, portable, highly accurate explosives detector."

"Field Forensics is manufacturing 500 ELITE cards for DHS and began delivery in October 2005."

"In autumn 2005, Field Forensics introduced the ELITE detection card and associated technology to a broader audience at an annual security conference attended by many state law enforcement agencies."

A copy of the article "FLC AWARDS – 2006 AWARDS FOR EXCELLENCE IN TECHNOLOGY TRANSFER DEPARTMENT OF ENERGY" on the February 15, 2007 Department of Energy (DOE) website is attached.

The article "FLC's Tech Transfer Award Winners" in the June/July issue of "Innovation: America's Journal of Technology Commercialization" contains the following statements:

"More than 700 laboratories and research centers—representing almost all federal departments and agencies—conduct over \$100 billion in research and development annually and employ more than 100,000 scientists and

engineers. The Awards for Excellence in Technology Transfer are presented each year to FLC member laboratories and their partners for successfully transferring federally developed technologies."

"Lawrence Livermore National Laboratory ELITE: Easy Livermore Inspection Tester for Explosives Summary: A disposable, portable, highly accurate explosives detector. The ELITE detection card is highly sensitive to more than 30 explosives, making it one of the most effective detection systems available."

"Transfer: Field Forensics, Inc. responded to a Federal Business Opportunities announcement of the ELITE licensing opportunity and was chosen as the licensee."


A copy of the article "FLC's Tech Transfer Award Winners" in the June/July issue of "Innovation: America's Journal of Technology Commercialization" is attached.

The secondary considerations that the inventions of Applicants' claims 2-24 has obtained commercial success, recognition by peers, praise by others, have been licensed, and fulfills a long-felt but unsolved need should be taken into account in deciding the obviousness or nonobviousness of Applicants' claims 2-24. The secondary considerations are substantial and overcome the rejection of claims 2-24 under 35 USC §103(a) over the primary Kardish reference in view of the secondary Dietze et al reference stated in the Office Action mailed November 1, 2006.

SUMMARY

The undersigned respectfully submits that in view of the foregoing amendment and remarks the rejections of the claims raised in the Office Action dated November 1, 2006 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



Eddie E. Scott
Attorney for Applicants
Registration No. 25,220
Tel. No. (925) 424-6897

Livermore, California

Dated: February 21, 2007

Valley Times
May 04, 2006
Also appeared San Jose Mercury News

Area lab creates small, easy explosives-detection device

Livermore Laboratory's credit card-sized tool is in high demand from military, police officers

Betsy Mason

Lawrence Livermore Laboratory has made explosives detection easier with a new credit-card sized kit that is cheap, easy and works in just minutes.

With terrorism fears running high since the Sept 11, 2001 terrorist attacks, detecting explosives is an even bigger priority for law enforcement and military personnel. Building on years of research with explosives detection in a laboratory setting, a team led by Livermore chemist John Reynolds grouped existing technology into a compact, stable package that could easily fit into the glove box of a police cruiser or a soldier's field pack.

The new detector is just two inches by three inches and slightly thicker than a credit card. Each kit will cost around \$25 and can generate results from one test in between one and four minutes.

The lab has licensed the technology to Field Forensics Inc. of St. Petersburg, Fla. On the market since October, customers include the U.S. Army and Canadian and Australian police. The company has pending orders from federal and state police agencies and from nuclear power plants.

"We have been talking with the airport authorities and they're quite interested in the technology," Reynolds said. "So I expect we'll see it in airports soon."

The new kit is as sensitive and reliable as the explosives-screening machines in major airports, but it is much less expensive and faster and easier to use.

The Lawrence Livermore team had military applications in mind when its members developed the kit. The ability to hunt down bomb makers in Iraq is critical to U.S. troops, they said.

"We think this will play an integral role," said Reynolds. "If you could catch them further up in the chain, like where the bombs are made, you'd actually be able to mitigate more attacks."

The kit can detect more than 30 different explosives. It contains a swipe that is used to wipe a suspect surface and then be re-inserted into the kit. A tiny glass vial full of chemicals is then broken inside the card, and if TNT is present, the swipe will change color. If there is no reaction, a second vial can be broken that will detect other types of explosives.

The new detector is called the Easy Livermore Inspection Test for Explosives, or ELITE.

The lab's researchers on the ELITE project were honored Wednesday night with a Federal Laboratory Consortium award for excellence in technology transfer that was presented during an awards ceremony in Minneapolis.